DOCUMENT RESUME

ED 229 036 IR 050 211

TITLE Geography and Map Libraries Section. Special Libraries Division. Papers.
INSTITUTION International Federation of Library Associations, The Hague (Netherlands).
PUB DATE Aug 82
NOTE 42p.; Papers presented at the Annual Meeting of the International Federation of Library Associations (48th, Montreal, Canada, August 22-28, 1982). Some figures may not reproduce well due to small print.
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Academic Libraries; *Cartography; Cataloging; Foreign Countries; *Geography; *Information Networks; *International Organizations; Library Associations; Library Collections; Maps; Research Libraries; Satellites (Aerospace); Shared Services; Social Science Research; *Special Libraries
IDENTIFIERS *Map Libraries

ABSTRACT

Papers on geography and map librarianship presented at the 1982 International Federation of Library Associations (IFLA) conference include: (1) "Geographical Canada-Research and the Network of Canada Collections in the Federal Republic of Germany" by Hermann Gunzel, which describes the history of German research in Canadian geography, the development of Canadian studies in Germany, the location and activities of German centers for research in Canadian geography, and the location and scope of Canadian collections in German libraries, with emphasis on library holdings and research activities at the University of Marburg; (2) "Remotely Sensed Imagery Information in Research Libraries: First Inter-University Network for Satellite Imagery" by Larry G. Carver (United States), which includes a brief history of satellite imagery, a description of the Landsat satellites, an explanation of the remote sensing concept, a discussion of applications of Landsat imagery data, the use of this data in libraries, the development of an inter-university network for sharing satellite imagery, and the use of the Landsat Worldwide Reference Systems (WRS) for organizing and accessing Landsat images; and (3) "The Exchange of Map MARC Tapes on an International Level: A Possibility for International Cartographic Networking?," a discussion by E. Hans van de Waal (Netherlands) of the use of International Standard Bibliographic Descriptions (ISBD) and Unimarc guidelines for the cataloging of cartographic materials and the creation of authority files at the Dutch Union Map Catalogue (DUMC). (ESR)

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Fédération internationale des associations
de bibliothécaires et des bibliothèques

networks
48th IFLA General Conference – Montréal
August 22-28, 1982
International Federation of Library
Associations and Institutions

1982

IFLA GENERAL CONFERENCE MONTREAL 1982
Division: Special Libraries
Section of Geography and Map Libraries

138/GEO/3-E
165-RE

Geographical Canada-Research and the Network of Canada Collections in the Federal Republic of Germany

by

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Geographical Canada-Research and the Network of Canada Collections in the Federal Republic of Germany

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1. Geographical Canada-Research

1.1 Historical Remarks

During the last years the librarians faced a boom in the reprinting of the diaries written by the discoverers whose geographical and ethnographical observations can still be of considerable value for modern research. But - as far as I know - there are no Germans among the explorers of Canada. I can only refer to a traveller of the 19th century: Johann Georg K o h l and his voluminous and informative book on his travels in Canada and through the states of New York and Pennsylvania, published in 1856, a book many writers afterwards made use of. He described Montreal with its then 80.000 inhabitants as the biggest and most vivid city in North-America north of the latitude of New York and Boston, vibrating in the efforts of a rapid and yet well planned expansion to an enormous scale.

Not the first research work by a German geographer but the first comprehensive one came out exactly 80 years later in 1936, based on investigations in Canada during the years 1932 and 1933. It is entitled: Landnahme und Kolonisation in Canada am Beispiel Südontarios, translated: Conquest and Colonization in Canada as exemplified by South Ontario. Carl S c h o t t was the author.

The Canadian Ambassador in the Federal Republic of Germany does not miss any opportunity to congratulate Prof. Schott on his 40 years of pioneering work that was of fundamental importance for the development of the Canadian studies in the German-speaking countries, and to call him the father of Canadian geography.

The latter may sound curious, but in fact geography is a young science in Canada: The first independent university institute of geography was founded in 1936 in Toronto under the direction of Griffith T a y l o r . And - as older Canadian geographers know - P u t n a m , his collaborator

A

and successor, made all his students read Schott's book on Ontario. That is - I think - the explanation of the fatherhood.

As a consequence of the political situation the research activities concerning Canada diminished in the course of the 30ies and vanished during the Second World War.

New beginnings in the postwar-time depended on the initiative of a few individuals. In 1954 Schott, who regularly lectured on Northamerica, moved from Kiel to Marburg. Several students of his were stimulated to write their doctoral dissertation on Canadian subjects,some went to other universities afterwards thus spreading the interest. As a representative of these I name Karl L e n z , now professor at the John F. Kennedy Institute for Northamerican Studies in West Berlin. This institute may serve as a striking example for the fact, that up till recently Canadian studies had to struggle hard to escape the shadow of American studies, for all the disciplines - except geography - co-operating in this institute were exclusively concerned with the United States of America up to the end of 1980.

1.2 Canadian Studies Programme

Stirred up perhaps by an article on "Canadian Culture in the Sixties" in the Times Literary Supplement, August 28, 1969, government agencies concerned themselves with the obvious lack of knowledge about Canada and its cultural vitality among Canada's political and economic partners. The report of the Commission on Canadian Studies assembled by T.H.B. S y m o n s (March 1976) indeed stated that Canada's image abroad is vague - an unkown country full of ice and snow and polar bears digesting foreign tourists - or completely distorted and that "in large measure this lack of knowledge about Canada results from our own failure to make the country better known and understood abroad " (Graham, p.39).

To improve the situation in the long run by means of a comprehensive strategy the Canadian Studies Programme was

established, since 1975 as a government programme with headquarters budgetary and personnel support, belonging to the Department of External Affairs, Public Affairs Bureau, Academic Relations Division.

In general, the purpose of the programme is "to develop an informed awareness and a balanced understanding of Canada" (Graham, p.39), for reasons of personnel and financial practicability the definition of objectives has been narrowed to some disciplines, especially Canadian history, politics, literature, sociology and economics with some flexibility guaranteed. In 1976 the programme was expanded to the Federal Republic of Germany.

One of the main thoughts of the programme is that, to stimulate enduring studies abroad, it is necessary "to bring to Canada for study foreign scholars with real or potential interest in a Canadian discipline" (Graham p.40) so that they may participate in seminars and conferences, get to know library resources and other research material and meet Canadian colleagues. To this end a certain number of limited fellowships and scholarships are being offered.

Scholarships are for persons who wish to go on to graduate studies in Canada. The grant is given for one year, with the possibility of renewal in case of a master's (one renewal) or doctoral programme (up to three renewals) at a Canadian university.

The Fellowship Programme or Faculty Enrichment Programme is designed to enable faculty members of the post-doctoral level to do research in Canada. Grant-holders have to commit themselves to introduce new courses on Canadian subjects or new and substantial Canadian contents into the lectures or seminars which normally are part of their teaching duties.
Short-time-grants proved to be very successful and the amount of courses concerning Canada increased steadily during the last years.

1.3 Gesellschaft für Kanada-Studien

No doubt the ideal and material support by the Canadian government was a considerable help for the German Canadianists to broaden and institutionalize their discipline. There is - as far as I know - no single English word for the German term "Kanadistik". It means all the disciplines concerned with Canada, geography as well as the investigation of bilingualism in Canada. We will keep to the term "Canadian studies".

It is also a part of the Canadian Studies Programme to encourage the establishment of Associations for Canadian Studies.

So the Cultural Attaché Paul Adams initiated a discussion about practical questions and the scholarly methods of future Canadian studies in 1976. The first result was a colloquium "Canadian Studies in the Federal Republic of Germany", organized by the Ambassador in 1977.

The initiative fell on fertile soil, a tradition grew up, in 1979 the Canadianists decided to form an association, and on February 24, 1980 the foundation took place. The Gesellschaft für Kanada-Studien - Association for Canadian Studies - started with 67 founding members, mostly from West Germany, but also from the other German-speaking countries Austria and Switzerland. Denmark, too, was represented. At the moment, the list of members comprises about 200, and there are a dozen Canadians and representatives of Belgium and Norway among them. The geographers are the second largest and - as far as I can see - the most active group.

The aims of the association are

- to support Canadian studies at a scientific level and to develop the discipline in research and teaching,
- to provide a deepening of the scientific and cultural relations between Canada and the German-speaking countries,
- to organize professional meetings and lectures, the editing and support of scientific publications and the improvement of the flow of information and communication.

It is the restrictive orientation towards scientific aims that distinguishes this association from the Deutsch-Kanadische Gesellschaft - the German-Canadian Society - I cannot speak about now in detail.
According to the disciplines represented by the members sections are established for

- Anglo-Canadian Literature and Language,
- French-Canadian Literature and Language,
- Political Science,
- History,
- Geography and Prehistory,
- Economics.

Alternating with each other the sections have to arrange the general theme and the inter-disciplinary part of the annual meeting. This year it was the geographers' turn, and they chose the theme "Regions and Regionalism in Canada".

To inform about the colloquiums, lectures, research and teaching in the sections, about grants and student exchanges, the sessions of the management committee and the annual meeting the association publishes a newsletter ("Mitteilungen") twice a year.
The same frequency is planned for the new scientific organ of the association "Zeitschrift der Gesellschaft für Kanada-Studien". The first issue appeared in 1981, the articles are in German, English and French.

I have brought with me some sample copies. You may keep them for yourself or your library. The association does not mind further subscriptions.

1981 has obviously been a productive year: the International Council for Canadian Studies (ICCS) was founded and the German association joined it. The other members of the Council are the Associations for Canadian Studies of Canada, the United States, France, Italy, Australia, Great Britain and Japan. The German association is the youngest and meanwhile

the largest of the member associations.
As a forum for exchange a newsletter is published under the title "International Canadian Studies News". In the first number of the first volume, published in January 1982, the member associations of the ICCS give a short description of their structure and/or their latest activities. An appendix provides the addresses of neighboured associations and sources of information and research material.

The ICCS plans to meet every two years in conjunction with the National Conference of the Association for Canadian Studies in Canada and will hold its first major international conference at the University of British Columbia, Vancouver in June 1983.

Instead of going into more details of the international network of Canadian studies organisations I want to return to the geography section of the German association.
In February 1982 it counted 38 members. To accommodate a few members investigating archaeological sites of the Eskimos and Indians prehistory has been included in the sections name.
The Geography and Prehistory Section organizes professional meetings as for example the symposium "Kulturgeographische Prozeßforschung in Kanada - Eine Bestandsaufnahme junger Feldforschung." - "Human-geographical Process-Research in Canada - a Stocktaking of Recent Field-Research" in November 1981 in Bamberg.
21 papers were read followed by animated discussions.

1.4 Canada-Research Centres

To get a quantitative image and to learn about the whole spectrum of the contemporary German geographical research in Canada I have sent a questionnaire to the geographers belonging to the Geography Section of the Association for Canadian Studies and in addition to the participants of the last professional and other Canadian meetings. It is, naturally, no absolutely complete mailing-list nor was it made by means of systematical search for Canada publications.

Nevertheless, the results permit to say something about the subjects and the regions investigated. The geographers were asked first about their finished research work concerning Canada and the corresponding publications, second about their research work in progress or preparation and third - to widen the circle of Canadianists known to me - about the research work on Canada done by colleagues of the same institute.
It would take too much time in the framework of this paper to enumerate the subjects and regions investigated, it is a broad spectrum reaching from geomorphology in the arctic archipelago to traffic systems in and between the big cities. Much attention is given to the development of the settlements and the landscape, to the Eskimos or Inuit as they call themselves and other ethnicity problems.
I want to restrict myself to some formal statements: At the moment I know 58 Canadianists who are geographers. In spring of 1982 53 have been questioned, 31 answered. 38 were organized in the Geography Section of the Association for Canadian Studies on February 1, 1982. Nearly all belong to the academic staff of a university, most of them are professors.

1.5 Canada-Research Centres

To illuminate their distribution in the Federal Republic of Germany I have drawn a preliminary map.
(No paper by a Geographer without at least one map.) A little dot means one, a big dot five geographers .

The importance of a university for geographical Canada-research is not always directly equivalent to the number of geographers involved. But combined with the quantity of publications and other qualitative factors it permits to say where the centres of Canada research in the Federal Republic of Germany are. I name them proceeding from north to south: Berlin, Hannover, Münster, Bochum, Marburg, Trier, Heidelberg and at last Bamberg, a very young university. We can regard as the main centres of this - let us say -

research network Berlin, Münster and Marburg, although there is of course no fixed hierarchy and others may see different priorities. In Trier it is being planned to establish a separate discipline for Canadian Studies with a special final examination. That would be an absolute novelty.

In general, the trend of geographical Canada-research in the Federal Republic of Germany seems to point to a steady growth, and this trend is perhaps being supported a little by the fact that research is no longer possible in some countries. For example a lot of German geographers were engaged in Iran and Afghanistan, and some of these have now turned to Canada.

2. The network of Canada Collections

2.1 General Situation

Research depends on research material, and books and maps belong to it. Canadian studies as a whole are a comparatively young discipline being practiced by various old-established disciplines. So there is no separate institute for Canadian studies at the moment and no really comprehensive Canada collection. That is the reason why the Canada holdings have to function as a network to meet the demands.

An officially established library network just for the purpose of Canadian studies does not exist. The co-operation of the Canada collections takes place in the framework of the German inter-library loan and the distribution of tasks in collecting highly specialized materials is arranged by the Sondersammelgebietsplan der Deutschen Forschungsgemeinschaft - the special collection plan of the German Research Society. Several disciplines and areas of the plan must be considered, e.g. : Jurisprudence, foreign newsletters, official publications, geography, cartography, regional geology, ethnology, language and culture of Indians and Eskimos, French language and culture, Northamerica as a whole, Canada.

2.2 Inquiry by Means of Questionnaires

To localize the Canada collections in the Federal Republic

of Germany and to characterize their holdings I have sent out questionnaires to the libraries of which I knew or assumed they possess more books on Canada than usual. Additional imformation was obtained from a directory of special holdings in the Federal Republic of Germany and from the cited plan of special collections of the German Research Society. I received also hints from scientists and librarians and - last but not least - from the Canadian Embassy which listed for me the institutions or persons it is or was supporting by book-gifts. Completeness shall not be claimed, especially not for institute libraries.
34 libraries were questioned, 29 answered, 3 of them added a copy of the questionnaire "Resources for Canadian Studies in the United Kingdom and Europe" they recently had sent back for a guide being published by the Canadian High Commission, London.
Our qestionnaire "Canada Collections in the Federal Republic of Germany" asked among other things the year of foundation, size of the collection, periodicals, special materials, disciplines included, additional funding, donations, information services offered, accessibility by means of inter-library loan, other Canada holdings and Canada-research at the same place.
It is not necessary to evaluate the results statistically, I will only mention the bigger collections and their size and point out characteristic features.

Difficulties occured in getting accurate figures from big old libraries, for their Canada holdings are part of the general holdings of various disciplines, and they are not counted in separate statistics. A separate Canada collection as in the University Library of Marburg is an exceptional case.

2.3 Important Canada Collections

On this map the distribution of the Canada collections in the Federal Republic of Germany is to be seen. To facilitate the survey, only university or other universal libraries with more than 1.000 materials on Canada are drawn with a

small dot . The big dots represent very important Canada collections exceeding more than 10.000 items . For institute libraries with their more specialized holdings the limits are 500 and 5.000: small and big circles.
Documentation centres are marked with a cross.
From north to south again:

Kiel: University Library, 3.500 vols. In 1980, the Canadian Government gave funds to establish a Canadian documentation centre. It comprises 155 microfilms (old periodicals and newspapers) and 3.300 microfiches (parliamentary papers).

Kiel: The Geographical Institute of the Kiel University has got 1.200 Canadian maps.

Kiel: The Bibliothek des Instituts für Weltwirtschaft - Zentralbibliothek der Wirtschaftswissenschaften - Library of the Institute for World Economics - Central Library of Economic Sciences - serves as the National Library for Economics; it has the status of a depository for Canadian Government publications. The stacks contain about 30.000 titles on Canada. The catalogue cards of the Author, Title, Geographical Area and Subject Catalogues are being multiplied and sent to other libraries.

Hamburg: The Bibliothek des HWWA-Instituts für Wirtschaftsforschung - Hamburg - Library of the Hamburg World Economics Archive - Institute for Economic Research - owns 6.000 vols. on Canada, mostly on the social sciences.

Hannover: The Bibliothek der Bundesanstalt für Geowissenschaften und Rohstoffe - Library of the Federal Institution for Geo-Sciences and Raw Materials - has several thousand vols. on geology and about 2.000 maps.

Berlin: The Staatsbibliothek Preußischer Kulturbesitz is the West Berlin part of the former National Library. The total number of books on Canada cannot be given. The discipline represented best is jurisprudence: About 5.000 vols. acquired since 1945. More than 1.000 periodicals published in Canada, most of them official publications. About 20.000 maps and atlases.

Berlin: John-F.-Kennedy-Institut für Nordamerikastudien, Freie Universität Berlin: About 15.000 vols. on Canada with additional material in microform, 31.000 maps and aerial photographs of the United States of America and Canada. The collection on ethnic minorities is particularly strong. Till December 1980 teaching, research and collecting was centred - except in the geography department - on the United States.

Göttingen: Niedersächsische Staats- und Universitätsbibliothek - Lower Saxon State and University Library: Except for maps - more than 2.000 - no statistics can be offered, but without any doubt there are very important Canada holdings. Because of the English-Hanoverian personal union which lasted up to the 19th century (1837), the library collected literature from and about Canada since its foundation in 1734. The old holdings of literature of travel in Canada are probably the best on the continent.

In the framework of the special collection plan of the German Research Society the library tries to collect comprehensively literature on Canada in the disciplines language, literature, history, administration, constitution, social and economic sciences, geology, mineralogy, soil science, geography, theory of science, system of higher education, book and library affairs. The acquisition lists are published.

Bochum: Historical Institute of the university: About 800 vols.

Köln: English Seminar of the university; about 2.000 vols.

Marburg: University Library: A special Canada collection was founded in 1949, based on the generous donation of the Canadian businessman Alan Coatsworth. By means of own funds and supported by the Canadian Embassy, Supply and Services Canada and Canadian libraries the collection has grown to about 15.000 vols. covering - similar to the State and University Library in Göttingen - a broad spectrum of disci-

plines, whereas the other Canada collections are restricted to one or a few disciplines in general.1.500 slides can be used especially for teaching purposes. A printed catalogue of the collection is waiting for a second edition.
In the university library system 6 institutes have Canada holdings, 2 of them with more than 500 vols.

Marburg: Geographical Institute: 574 vols., 1.086 maps, about 1.000 photographs and 300 aerial photographs.

Marburg: Geological Institute: 730 vols.

Trier: University Library: 4.000 vols., 1.000 microfiches.

Trier: Quebec-Archiv: Founded in 1978, about 1.500 microfiches.
In 1979 they began to build up a computer-aided bibliography of French-Canada. It contains as a sort of region oriented union catalogue books possessed by the libraries in the Federal Republic of Germany and by two Swiss libraries.
At the end of 1981 the bibliography was expanded to Anglo-Canada. The data are only available by computer print at the moment.

Heidelberg: Bibliothek des Max-Planck-Instituts für ausländisches öffentliches Recht und Völkerrecht - Library of the Max-Planck-Institute for Foreign Public Law and International Law: 4.400 vols. mainly Canadian law, international law, comparative jurisprudence.

Stuttgart: Bibliothek des Instituts für Auslandsbeziehungen - Library of the Institute for Foreign Relations: 1.650 vols.

Augsburg: University library: about 2.500 vols.

München: Bayerische Staatsbibliothek - Bavarian State Library: About 7.000 vols., complete sets of the topographical map series. To be mentioned especially: Literature on Easteuropean emigrants in Canada.

Let me summarize these statements:
The main centres of the Canada collection network are Kiel, Hamburg, Berlin, Göttingen, Marburg, München.
The question arises whether the centres of Canada-research correspond with the important Canada collections or vice versa. You could try to prove it, but we have only examined the centres of geographical Canada-research till now and they are not always identical with the Canada centres of the other disciplines. The combination of intensive geographical research and of large collections seems to work out best in Berlin and Marburg.

From outside the holdings of the large collections are accessible by means of the inter-library loan that is based on the regional central catalogues in the states of the Federal Republic. A computerized special catalogue of the Canada holdings is being made in Trier, the enterprise is at an early stage yet. Complementary to the book and map collections documentation centres based on microfiches have been established with the help of the Canadian Government in Kiel, Berlin and Trier.

In this context I would like to mention a major new microfilming project: the Pre-1900 Canadiana. This microfiche collection will comprise the entire national literature, 50.000 titles concerning Canada or written by Canadians, printed before 1900, divided into 12 subject segments. The complete set will probably be acquired by the John F. Kennedy Institute in Berlin and should be in the Federal Republic of Germany for a second time.
As there is a widespread interest in Canadian studies in Marburg, the University Library of Marburg would like to get a complete set as well. But the price is enormous - 200.000 US $ - and cannot be paid for out of the normal budget. Most of the other Canada collections are only interested in single subject segments as e.g. French-Canadian literature and language or economics.

2.4 Support by the Canadian Government

In general, the university and institute libraries did not include sufficient material about Canada for research work or specific courses in the seventies. For this reason the Department of External Affairs pursuing the Canadian Studies Programme contributed to the establishment of a well selected library base in various programmes concerning series, learned journals, introductory texts and bibliographies. These programmes, however, were only meant for stimulation, for "seeding", and could not and should not replace the regular book purchase.

Individual scientists obtained books for certain teaching and research projects. The books had to remain part of the respective institute library.

Institutions with well developed Canadian studies were invited to order the books they require up to a fixed amount, some got a selective depository status with Statistics Canada.

With comparatively modest but well thought out support during the last years the Canada collections developed into a network that becomes more and more an effective basis for Canada-research.

3. The University of Marburg as a Centre of Canada-Research

3.1 Canada Holdings in the University Library System

"Other towns have a university, Marburg is a university" - the Lord Mayor and the University President like to quote and to point out thereby the importance of the university - it was founded in 1527 and has about 15.000 students this year - for the town of about 70.000 inhabitants now.

Let us take the University of Marburg as an example of a Canada-research centre, perhaps that with the broadest variety of interest in Canadian subjects and of holdings on Canada. The Canada collection of the university library with about 15.000 books has been mentioned above. Other Canada holdings are situated in the institutes of geography, geology, English and Romance philology, political science, history:

together more than 4.000 titles. So the total sum of Canada holdings approaches 20.000.
Besides supplying the necessary books the University Library stimulated Canadian studies by exhibitions and occasional Canada weeks in co-operation with the Canadian Embassy, Bonn.

3.2 Research Activities of Various Disciplines

The variety of disciplines with activities in Canada proved to be much bigger than supposed, when the University President invited the Canadianists to a round table talk in Mai 1982. 21 persons attended including three guest professors from Canada and the United States. Everybody talked about his specific interests and projects. The disciplines and some projects in brief:

- Political science
- Ethnology: they had just made an excursion with 15 students to an Indian reservation
- Military sociology with special interest in problems of bilingualism in the Canadian army
- Anglo-Canadian literature
- Pharmaceutical technology: co-operation with Canadian institutes
- Botany: breeding plants at the cultivation frontier
- Geology: stratigraphy by means of conodonts
- Medicine: co-operation in highly specialized projects
- Comparative education, differentiation in the educational system
- University Library: Canada collection
- Hessian State Archive: emigrants to Canada.

3.3 Geographical Research Activities

I have saved up geography, the most active discipline of the Canadianists in Marburg, for the very end to go a little bit into details.9 numbers of the series "Marburger Geographische Schriften" have been dedicated to Canada, containing doctoral dissertations as well as collections of several papers. But of course the Marburg geographers published their Canadian studies elsewhere, too. So it is necessary to look at their personal bibliographies.

Professor S c h o t t , aged 77 now, can present 23 publications, reaching from Canadian beaver meadows (1934) to mining in Quebec (1977).
Professor E h l e r s began with a doctoral dissertation on the northern Peace River Country, Alberta in 1965 (9 publications on Canada).
Professor P l e t s c h (10 publications) is now the driving force of not only the geographical Canada-research in Marburg.

Three Canadian guest professors have taught at the institute: Prof. Dr. J. S p e l t , University of Toronto (1967); Prof. Dr. L. S a w a t z k y , University of Manitoba, Winnipeg (1972); Prof. Dr. A. H e c h t , Wilfried Laurier University, Waterloo/ Ontario (1979), and there are still good and active relations with them.

Further Canadians and German Canadianists - 35 together - came to Marburg in 1978 to participate in the symposium "Northern Canada - Natural Area and Development Potential". The papers and discussions were related to three main fields:

1. Ecological burdening capacity of the subarctic and arctic region
2. Integration problems of the Indian and Eskimo population
3. Potential of economic revenue and possibilities of making use of natural resources

On the occasion of the 75th birthday of Carl S c h o t t in 1980 a colloquium was arranged entitled "Carl Schott and Canada-Research".

A new element at graduate level has been introduced in 1980. Since then the Geography Department is participating in the "integrated studies abroad" programme funded by the German Academic Exchange Service (DAAD). The main idea of the programme is that the results achieved at a foreign university are recognized as an integrated part of the study plan at the home university. Detailed arrangements on requirements and certificates are necessary.

The geography department has come to arrangements with the

- Department of Geography, McGill University, Montreal
- Département de Géographie, Institut d'Urbanisme, Université de Montréal
- Université Laval, Quebec
- Department of Geography, Wilfried Laurier University, Waterloo/ Ont.

During the academic years 1980/81 and 1981/82 3 graduate students each have been in Canada, 4 in Montreal studying urban geography systems and 2 in Waterloo. The programme will probably be continued with 3-5 grants a year.

The main project at the moment, running from 1981 to 1984 is concerned with ethnicity problems in Quebec and Ontario. The project is financed by the Volkswagen Foundation, directed by Alfred P l e t s c h in co-operation with Alfred H e c h t from Wilfried Laurier University, Waterloo and Ludger M ü l l e r - W i l l e , McGill University, Montreal.
The studies carried out in the Inuit region of Northern Quebec (Müller-Wille) are centred on the possibilities of an economic and social integration of the Indians and Inuit.
In northern and metropolitan Ontario (Hecht) it is mainly the question which ethnic groups succeeded in progressing from the periphery to the downtown area and in participating thus in the decision processes. Pletsch's investigations in the Eastern Townships, Southeast Ontario, concentrate on economic changes, especially in the agricultural sector, and their often supposed dependence on the different behaviour of the various ethnic groups, mainly Anglo- and French-Canadians.
A doctoral dissertation - based on investigations in the same region - is being written on the self-estimation and the mutual evaluation of the ethnic groups as well as the mechanisms of interaction (Martin S c h u l t e).
Exemplified by the city of Montreal the influence of ethnic minorities on the shape and the shaping of the city is being investigated in another dissertation (Peter W o l f f).

To co-ordinate the research work of all participants in the project and to discuss methodical aspects a symposium was held from August 18 to 23, 1981 in Montreal.

To present first results the next symposium will be held from September 1-5, 1982 (here) in Montreal. The three Marburg geographers Pletsch, Wolff and Schulte will present papers.

All the field research of the project being done an international symposium in Marburg is planned for October 1984. The preliminary title is "Ethnic Structures and their Area Impact in Canada".

3.4 Outlook

So far the Canada activities of the geographers in Marburg. Due to their initiative the University President invited the Canadianists of all disciplines to the round table talk. The broad variety of Canadian studies and the enthusiasm of the scientists deeply impressed him. So it is to be expected that he will institutionalize the University of Marburg which is already a centre of geographical Canada-research and a centre in the network of Canada collections as an official Canada-research centre and to stress this by partnerships with Canadian universities.

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1982

réseaux
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22-28 août 1982
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networks
48th IFLA General Conference – Montréal
August 22-28, 1982
International Federation of Library
Associations and Institutions

IFLA General Conference, Montreal 1982
Division: Special Libraries
Section GEOGRAPHY AND MAP LIBRARIES

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REMOTELY SENSED IMAGERY INFORMATION IN RESEARCH LIBRARIES: FIRST INTER-UNIVERSITY NETWORK FOR SATELLITE IMAGERY

by

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Remotely sensed satellite imagery and aerial photography are now being demanded as essential research materials. This demand has resulted from academic institutions developing curricula using or supporting remote sensing as a new discipline. Libraries must be responsive to this new technology and confront the realities of collecting, accessing, and servicing these vital information resources. Only by using compatible bibliographic systems, networking, and interuniversity sharing can libraries offset the high financial impact of providing needed imagery to researchers.

In the last two decades, remotely sensed imagery has aided man's struggle with terrestrial problems that had previously been unsolvable using conventional earthbound methods and technology. Great technological developments have been occurring in remote sensing at a time when all nations must be responsive to rapidly growing populations, unprecedented demands on the Earth's resources, and major environmental issues.

A BRIEF HISTORY OF SATELLITE IMAGERY

In the early 1960's, the United States Manned Spacecraft Program gave the general public their first look at the Earth using remote sensing systems capable of detecting considerable detail on the Earth's surface. These new high altitude satellite observation platforms provided man with the opportunity to obtain a new synoptic perspective of his planet's environments. Information obtained from this new technology has enabled scientists and planners to more sensibly develop and utilize the Earth's limited resources. Prior to the development of satellite imagery, resource planners had to rely on photographs taken from low to medium altitude aircraft. Using this type of photography has two limitations for large area analysis. First, each photographic image covers only a relatively small geographical area resulting in many images being needed to survey a defined study site. Second, the identification of ground features was confined only to those that would register on film functioning in the visible range of the electromagnetic spectrum. Scientists realized that a broader perspective could be gained by stepping farther away from the planet and by extending imaging capabilities beyond man's visual range. (see fig. 1)

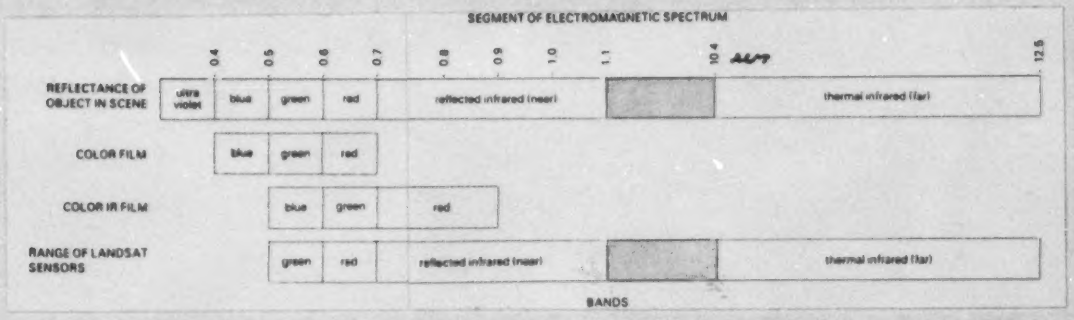

fig. 1

Remotely sensed satellite imagery, as a viable information tool for research, was born when a picture of the Earth was obtained from space in 1959. The systematic use of remotely sensed satellite imagery came in the early 1960's with the launching of the TIROS and NIMBUS meteorological satellites. At that time, TIROS used small television cameras to send images of the Earth's cloud cover. The NIMBUS weather satellites were atmospheric observatories used for testing a variety of remote sensing systems in space. The meteorological satellites were not designed to discriminate, or resolve, detailed objects on the surface of the Earth; however, they proved that the technology existed to keep satellite sensors pointed towards the Earth at all times. This capability, plus a long operating life in orbit and a high weight carrying capacity, later led to the NIMBUS satellite being adapted for use as the United States' Earth Resources Technology Satellite (ERTS).

Also in the 1960's the Gemini and Apollo astronauts, using handheld cameras, illustrated some of the scientific benefits to be gained by observing the planet's surfaces from space. One of the first significant tests of acquiring data about the Earth's resources from satellite imagery was made during the Apollo 9 flight in 1969. In this flight four Hasselblad 70mm cameras were successfully used in tandem to image the southern part of the United States. Using different photographic filters, the film in each camera was sensitized to separate spectral wavelengths of light. This Apollo experiment demonstrated the utility of multispectral imaging of the Earth. The same multispectral principle was adopted for incorporation into the Earth Resources Satellites imaging systems.

In 1972, the first ERTS Satellite was launched to evaluate the feasibility of examining earth resources from space. Before the launching of ERTS-2, the Earth Resources Satellites were renamed to "Landsat" to differentiate them from "Seasat", the oceanographic satellite. The Landsat program was initiated principally for the United States Department of Agriculture and the United States Geological Survey to image the Earth's surface and inventory the planet's resources. Up to 1972 this type of

data had been acquired primarily by low to medium altidude aircraft using conventional camera systems and standard films. Landsat offered an exciting new perspective. Imagery recieved from Landsats 1, 2, and 3 has formed the basis of international interdisciplinary terrestrial research. Landsat data is giving an alternative source of information that can be afforded by the most distressed national economies.

DESCRIPTION OF THE LANDSAT SATELLITES

Landsat satellites were not designed to use conventional cameras. Because of their high operational altitude, 570 miles (912 kilometers), electronic digital information gathering systems were employed to provide broader spectral sensitivities; they also had the added advantage of being integratable with other computerized geographic information files. These satellites carry two remote sensing imaging systems. The primary sensor is the Multispectral Scanning System (MSS) which is a direct descendant of the Scanning Radiometers flown aboard the NIMBUS and TIROS meteorological satellites. The second system consists of Return Beam Vidicon (RBV) cameras which were developed from the television cameras used on the first TIROS satellites. The nature of the spacecraft orbit allowed the entire globe to be imaged once every 18 days on a continuous cycle. This new synoptic view from space allows up to 13,000 square miles (33,800 square kilometers) of the Earth to be imaged in one photograph. Moreover, this can be done repetitively. Researchers and scientific groups in over 130 nations have been benefiting from the information obtained from Landsat imagery.

A SHORT EXPLANATION OF THE REMOTE SENSING CONCEPT

Detecting the nature or condition of something without actually touching it is called "Remote Sensing". The term is usually restricted to methods that employ electromagnetic energy, such as light, heat, and radio waves, as the means of detecting and measuring characteristics of objects. Electromagnetic energy refers to all energy that moves with the velocity of light in a harmonic wave pattern. Our eyes are one of the most common examples of obtaining remotely sensed information. "Remote Sensors" are the mechanical or electronic devices which collect physial information from a distant source. Some sensors, primarily the cameras, utilize visible energy; others use types of radiant energy, such as x-rays and radar, which cannot be seen by the human eye. All of these energy wavelengths together make up the "electromagnetic spectrum". Radiant energy is the common denominator to all remote sensors. Theoretically, sensors can be designed to discriminate between discrete radiant energy levels; the problem, however, is in determining the individual energy response under all atmospheric conditions for the object that is to be detected.

APPLICATIONS OF LANDSAT IMAGERY DATA

Landsat data provides a new window through which man can view the world. This perspective has focused attention on the need for more meaningful international cooperation and information sharing in order to better manage the Earth's limited resources. A single satellite image conveys as much information as thousands of written words; it is a veritable encyclopedia. Supported by ancillary data, each image represents a universe of up to date information from which the user can select the part that deals with his interest.

Before illustrating how these new imagery products have impacted a variety of disciplines, it is important to recall that the satellites's imaging systems record only selected portions of the electromagnetic spectrum; these divisions are known as "bands". By using a particular band or a combination, a researcher may identify or derive information about a feature or object on the Earth's surface. Moreover, this can be done in the context of a synoptic view of a large area. The following selected examples provide a brief summary of the interdisciplinary nature of this new informational tool. (see fig. 2)

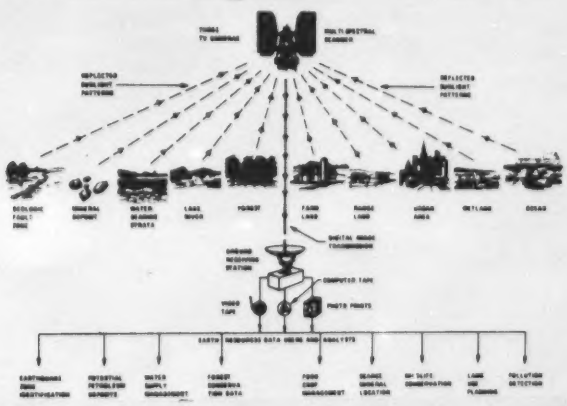

fig. 2

(Typical ground features recorded via LANDSAT. Graphic Credit: General Electric Space Division)

Agriculture throughout the world has benefited from the use of Landsat imagery to help in the identification of diseased or insect infested crops, enabling their early isolation and treatment. The repetitive cycle of Landsat coverage enables agonomists to study the success of the treatment or monitor the spread of the disease. Scientists are also using this data to measure the cropland acreage, assess the crops under cultivation, and predict crop yield which provides an indication of a nation's food supply. Soils are being successfully classified and mapped

from satellite data. This is allowing governments to better plan and manage their land use and development. Mapping the natural vegetation of large areas has led to improved range management, prediction of the fuel loads in high risk fire areas, estimation of seasonal availability of food for wildlife, and preservation of natural resource areas. Forestry researchers are using the data to estimate timber volume, locate areas with erosional potential due to logging operations, and provide supplemental planning tools for preservation and reforestation. Hydrologists throughout the world are detecting potential ground water resources, determining watershed areas, estimating water runoff from snowpack for urban and agricultural development, and making flood assessment surveys using several dates of Landsat imagery. Geologists are successfully using the satellite data to identify tectonic features on the earth, assist in mineral and petroleum exploration by identifying and directing attention to various geologic anomalies, and aid in the construction of more accurate geologic mapping. Geographers are using Landsat digital data to subject map areas of the world where no such mapping had ever been done. Other such diverse disciplines as epidemiology and computer science are also benefiting from Landsat data. These few illustrations are intended to alert Library administrators to the broad user community and the need for subject specialists technically qualified in remote sensing to collect, access and service this new data format.

REMOTELY SENSED IMAGERY DATA IN LIBRARIES

Imagery is a new and challenging frontier for information science. For many years, some libraries have collected conventional aerial photography for small geographic areas or specific physical features. However, due to the storage problems associated with the large quantity of photographs this required, the limited number of trained library service people, and the lack of uniform bibliographic information for remotely sensed data, imagery has not been collected systematically or repetitively.

Remote sensing technology is generating new data formats and supporting broad education emphases. It is moving libraries into a new media collecting era. This material is interdisciplinary. It is available to all researchers in formats that lend themselves to applications in almost every subject field. It is objective data that can be subjected to the researchers own interpretation. The information contained in these materials has become absolutely necessary to scientists and managers who must deal with the dynamnic aspects of the Earth's political, social and physical environment.

In response to the academic needs of the University, a prototype library department was built at the University of California, Santa Barbara (UCSB). The Map and Imagery Laboratory at UCSB is an 11,000 square foot facility comprised of a Remote Sensing and Cartographic Laboratory and Library Collection of

more than 1.7 million images, maps, and related materials. In response to many academic needs and research interests, this facility was custom-designed to make interdisciplinary use of the imagery, maps, and laboratory equipment. By using maps and imagery together the user can maximize their effectiveness as informational resources. During 1981 the facility has aided research and teaching in more than 35 academic disciplines. The map collection provides cartographic coverage of the world at many varying scales. The subject emphases of this collection are the physical and biological sciences, topography, oceanography, land use, environmental conditions, urban planning, and resource development. The imagery collection contains 1.5 million photographic frames ranging from standard black and white prints to color infrared and radar transparencies. It also contains 16mm microfilm copies of NASA and USGS photography of the United States. Multispectral 70mm imagery covering a sequence of years is available for much of the world through Landsat 2 transparencies. The collection also maintains a 16mm microfilm file of Landsat 1, 2, and 3 band 5 imagery.

The Laboratory offers students and researchers, in all subject fields, access to its remote sensing and cartographic equipment along with individualized training on the instrumentation. Included among these instruments are: monocular and stereo Zoom Transfer Scopes, four types of zoom stereoscopes, a multispectral additive color viewer, a high resolution film viewer, Map - O - Graphs, Polaroid and Hasselblad copy camera systems, various types of manual and electronic planimeters, several variable intensity and standard light tables, complete drafting facilities, and both CRT and hard copy terminals. The terminals also serve as the Laboratory's link to the United States EROS Data Center's Image File.

It has been proposed that this Library Laboratory become the University of California Imagery Resource Center. This will result in the following services to researchers: (1) A state - of - the - art remote sensing and cartaographic laboratory containing both manual and computer - oriented equipment for the analysis and manipulation of both imagery and mapping. (2) Training in the mechanics and applications of the Resource Center's laboratory equipment, collections of imagery and maps, and computerized data bases indexing various imagery and mapping sources. (3) Research assistance to individual patrons on the interaction of their own research with the Center's equipment and collections. (4) Computerized and manual information searches by geographic area, and access to remote sensing materials in the UCSB and other participating collections. (5) Development of new and innovative uses of the Center's collections, equipment and computing capabilities for (a) research, (b) the production of new imagery and graphic products, and (c) the design or modification of software for data analysis and collection indexing. (6) Descriptions of the various computer data bases and manual indexing systems for imagery and mapping along with explanations of their

use. (7) Interlibrary loan of designated materials to other facilities with approved handling capabilities.

In addition, as an Academic Resource Center, the Laboratory will provide the following instructional and educational services: (1) Group instruction in the use of the Center's equipment, data bases, and collections. (2) Workshops, short courses, and seminars on remote sensing as a tool for both basic and applied research through the use of the Center's equipment, collections, and facilities. (3) Function as a prototype to other organizations needing assistance in handling remote sensing materials.

INTER-UNIVERSITY NETWORK FOR SHARING SATELLITE IMAGERY

In 1981 the United States Department of Agriculture's Aerial Photography Field Office awarded, through competition, their collections of Landsat imagery to four educational institutions which had shown exceptional interest in the development and use of remotely sensed imagery. The recipients of this unparalleled gift, valued in excess of $25,000,000, were: the Map & Imagery Laboratory at the University of California, Santa Barbara; the American Geographic Society Collection in the Golda Meir Library at the University of Wisconsin, Milwaukee; the Geography Department at Oregon State University; and the University of Arizona's Library.

To make all components of the Landsat gift available to more university researchers, the Map & Imagery Laboratory initiated the formation of a cooperative resource sharing network comprised of the recipients of the imagery. At the first meeting of the Consortium, held at the University of California - Santa Barbara, the mechanisms for loaning, storing, handling, and reproducing the imagery were discussed. The principal advantages for the establishment of this Consortium are adopting common accessing methods for the awarded imagery and the cooperative sharing of the materials.

At the organizational meeting held in August 1981, several issues had to be addressed in order to effectively coordinate the imagery collections.

1) The area and date scope of each of the collections had to be determined and a composite inventory made. The USDA Landsat imagery gift was comprised of MSS and RBV scenes processed at Goddard Space Center and reproduced as second generation negative images. With the initial success of Landsat 1, various countries decided to build their own Landsat Satellite Receiving Station. This permitted them to receive data directly from the satellites and process it according to their needs. After these stations became operational, the United States recorded only selected satellite data for the areas served by these foreign stations. The various dates for the activation of non-U.S. receiving stations had to be established in order to determine the extent of

foreign coverage in the Consortium members' collections. It was also noted that researchers could obtain additional information about non-U.S. Landsat coverage through the individual receiving stations or from cooperative service networks, such as Europe's EARTHNET. (see fig. 3)

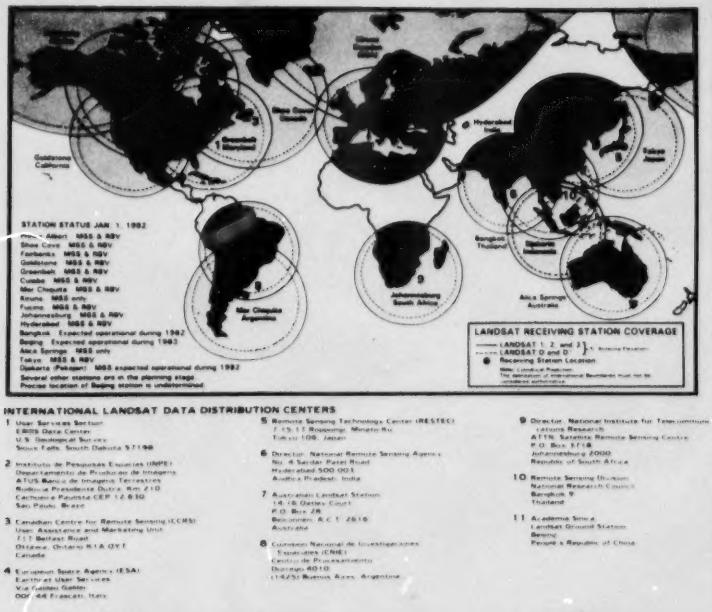

fig. 3

(Graphic Credit: United States EROS Data Center)

2) The members also had to determine how to handle the rolls of negative imagery, particularly in a library atmosphere. Researchers normally prefer to use imagery in a positive format. Several methods for converting the negative imagery to a positive format were outlined. Some of the methods discussed were: contact printing, photographing the 70mm negative image with negative copy film to produce a positive photograph, and contracting with a commercial photographic reproduction firm to produce the desired photographic product. It was decided that each collection would choose the system that best met the user's needs providing the original negative was not damaged. Recovering the monetary charges for the reproduction services would be the responsibility of the collection holding the needed material.

3) It was imperative that each collection use a common indexing system for the Landsat imagery. The method agreed upon is based on the Worldwide Reference System (WRS) developed by the United States' EROS Data Center. This system was chosen because it had a proven service record and was based on EROS' MicroCata-

log available to all Consortium participants. Moreover, each institution would need a minimal monetary investment to control their own collection and yet have bibliographic access to the others. Since this system is in wide use within the United States as well as other countries, patrons from other institutions could use the same referencing system when requesting information from the Consortium members.

BIBLIOGRAPHIC CONTROL USING THE WORLDWIDE REFERENCE SYSTEM

The Landsat Worldwide Reference System (WRS) was constructed so that all images from Landsat could be organized and accessed using a global location method. An individual image is known as a 'scene'. Each scene has a predetermined geographic point as its approximate center. This point is designated by an intersection of the northeast to southwest path of the satellite and a right angle position known as the row. (see fig. 4) These intersects represent a position on the earth where an image is taken on each successive pass of the satellite. The EROS MicroCatalog is arranged by these predetermined Path and Row intersects thereby allowing a user to search for the availability of imagery in a particular area. Once a user has determined that an image exists and is technically acceptable, a second file known as a MicroImage Catalog may be consulted. This file consists of actual 16mm images of each scene within the desired Path - Row locality. From this product a user can determine for himself if the image is acceptable or whether clouds or other factors make it unusable. Once identified, the image may be sought from and viewed at the collections of the Consortium members or may be purchased from the agency holding the original data. Although not completely compatible with the EROS microfiles, the reference systems of Canada, and Europe's EARTHNET, use similar retrieval and viewing systems.

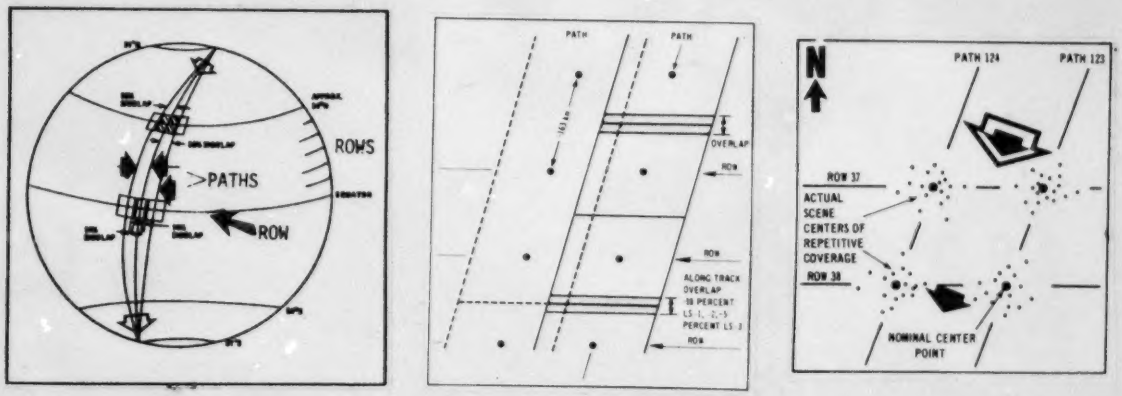

fig. 4

The delay in distribution of current microfiles produced by agencies such as EROS and EARTHNET is its weakest point. Updating the MicroCatalog can take three months or more. An alternative, but more costly method, is to have a computer link directly into the main database of the distributor. Such a link exists between UCSB'S Map and Imagery Laboratory and the EROS Data Center. This link provides the most current information on available imagery plus quicker and more flexible searching. EROS' system is known as INORAC (INquiry, ORder, and ACcounting) and provides the user with several methods of searching by geographic coordinates. Searches provided under this system can be refined by factors such as the quality of image, the amount of cloudcover, the scale, formats, dates, and producer. The database system is not limited to the imagery from Landsat; it also provides information on several other kinds of remote sensing photographic products from various United States Government producers. The system also provides access to special products, such as color composites of Landsat, that will not appear in the MicroCatalog if they were generated after the original imagery information was entered into the microfile database.

FUTURE DIRECTIONS OF SATELLITE REMOTE SENSING

The spectacular achievements of Landsats 1, 2, and 3 in carrying out the Earth Resources Remote Sensing Mission have prompted the United States, Europe, Japan, as well as the general worldwide user community to develop new remote sensor capabilities. NASA's new sensing instrument is called the Thematic Mapper. It is to be launched this year aboard Landsat D. This system has major performance improvements over those in the first three satellites. First, its ground resolution is 30 meters, 2.5 times better than the 80 meter resolution of Landsats 1 2, and 3. Second, the imaging wavelengths selected are more specific to user needs. Third, the photographic divisions between absolute black and absolute white consists of 256 levels, 4 times greater than the first three satellites. The SPOT satellite system being developed in Europe is reported to have 20 meter resolution; the launch date is scheduled for 1984. Japan's ERS - 1 is planned to have a resolution of 10 meters. These new and more cost effective systems will expand, on a global dimension, the kind of detailed and timely information needed by decision makers and researchers concerned with the future of a nation.

It is the responsibility of Libraries to organize and service information resources. If they are to fulfill this mission, they must accept satellite imagery and, indeed, all remote sensing data, as legitimate and necessary library materials. Persons who are technically competent in Remote Sensing must be recruited to collect, bibliographally control, and service this media. Proper viewing and storage facilities must be incorporated into library service centers. Collecting remote sensing is an expensive and challenging endeavor; only through networking may participating libraries hope to be responsive to the teaching and research community they support.

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THE EXCHANGE OF MAP MARC TAPES ON AN INTERNATIONAL LEVEL: A POSSIBILITY FOR INTERNATIONAL CARTOGRAPHIC NETWORKING?

by

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Meeting 142

Introduction

Now that the ISBD(CM) and the chapters concerning cartographic materials in Unimarc are published, we map librarians can gradually start to reap the harvest. A second edition of the "Anglo-American Cataloging Rules" has been published and many other cataloging communities are also drafting rules. With the setting up of formats for automated national union catalogues, Unimarc is being taken into account and the happy times of shared cataloging on an international level are imminent. One would say that now project managers would be able to concentrate on the internal problems of their own systems. But, when staff of the Dutch Union Map Catalogue started to assess what would be needed to use Map Marc tapes from outside, we came across some questions which might have international aspects.

One question concerns the measure in which Map Marc catalogues can become a part of the national Marc Offices technically and organizationally, and to what extent special provisions will be needed for the map catalogues. The exchange of tapes in the near future will probably take place bilaterally between institutions administering the Map Marc catalogues. This exchange can be with or without mediation of bibliographic services. If the IFLA International Office will be realized, it will supervise the compatibility of various formats. It will not function as an international union catalogue office. And therefor, it might prove useful to have consultative relations on an international level, next to the bilateral contacts. The descriptive parts of the catalogue and the form of the magnetic tapes are laid down in ISBD's and in Unimarc, respectively. As yet, such a sound footing does not exist for authority files containing access points, which are especially important for cartographic materials.

To improve the practical value of this paper, I will go further into several subjects that cropped up within the DUMC. This DUMC is, of course, only a tiny branch on the Map Marc tree and my remarks are mainly meant to elicit reactions from a wider public of map librarians.

How the DUMC uses ISBD(CM) and Unimarc.

To be able to use the Unimarc communication format as an internal format, the DUMC had to extend certain parts of it. The most important extension concerns the record identifier, field 001. This field has received a very important function in stipulating relations between records of different descriptions. With the use of three sub field codes we indicate relations between descriptions made according to different techniques within the DUMC-system. These subfield codes have the following meanings:

a the number under which the record is registered in the system,
b control number of the description from which data are copied automatically,
c control number of the first higher description level.

The first indicator of field 001 states to what level the description belongs. For every subfield an indicator is used to make clear whether the field does or does not differ from the corresponding field in the higher level. In this way it is possible to make descriptions with several levels, although the DUMC enters only complete and autonomous descriptions. This system, which is very important for making multi level descriptions can not be recorded on Unimarc tapes. Nevertheless, other Map Marc catalogues might be interested in these data. The multi level description technique is often very convenient for describing cartographic materials. It is a very efficient way to describe map series and it also serves well to indicate relations between a cartographic document and other documents. If it is desirable to have all maps, appending with one report, come up as a group in a bibliography, this can be effectuated by recording the report in the first level and arranging the map descriptions in the level below.

Until the DUMC will be integrated in the national bibliographic system, the project functions off-line. The sequence of elements within the data base is therefor appointed by tagging of subfields and subfield sequence numbers. The sequence of bibliographic elements, as prescribed by ISBD(CM) however, depends on occurrence of certain elements, such as parallel titles. This causes difficulties in a system where sequence is settled by tagging. If necessary, the tag indicator can be supplemented

with field sequence numbers. The example below illustrates that the correct ISBD-sequence can be attained in this way:

Prescribed ISBD(CM) sequence and DUMC coding underneath:

title proper	other title information	parallel title	other title information	statement of responsibility
200 A	200 C	200 A	200 A	200 D

Selection by means of subfield sequence numbers

title proper	parallel title	other title information	other title information	statement of responsibility
200 A0	200 A1	200 C0	200 C1	200 D0

Selection by means of field sequence numbers

title proper	other title information	parallel title	other title information	statement of responsibility
2000 A	2000 C	2001 A	2001 C	2001 D

The ISBD punctuation is generated automatically. The DUMC-system is set up in such a way that the tagging (field and subfield codes) determines the punctuation mark preceding the bibliographic element. Only when certain bibliographic elements are being repeated, it is no longer possible to go by this coding alone for the determination of the punctuation mark that is to be printed. In these cases, the cataloguer indicates the desired punctuation through the second indicator in the related subfields.

In the DUMC-system we have also extended the possibilities of linking entries, regulating standard links to other bibliographic items. The Unimarc-system offers the possibility to refer to other bibliographic entities related to the described entity within the description. These references can only be made, provided that the bibliographic entity referred to is included in the same information base. While experimenting with this possibility, it soon became clear that this Unimarc rule leads to undesirable restrictions. To prevent valuable information from being lost in cases where the referred to item does not occur in the DUMC data base, we have found the following solution. We have created a possibility to refer to other descriptions, as well as a possibility to include in the

description itself (in the 4.. fields) bibliographic elements of the document we wish to refer to.

The remarks above could be extended with many more subjects, attractive for inclusion in the exchange of information, for which Unimarc does not provide. It might be worthwhile to pay more regard to the internal formats of other Map Marc insitutions when an intern format has to be set up or altered.

The DUMC authority files.

The DUMC constructed authority files for a names of persons, corporate authors and congresses, b titles of anonymous documents, c subjects and d regions. The Canadian system for Marc-structured authority files was chosen as a basis. Our system is being used in several institutions now and has the advantage that it is independent of spelling and language, as all access points have their own unique codenumber. It also contains an extensive system of references. In the DUMC descriptions data base only the authority record numbers are entered, which refer to the related records in the access points data bases. For making a catalogue or bibliography, the definitions and systematic coding are generated via record numbers.

Unimarc offers the possibility to take up systematic and verbal subject identifications; also names and titles can belong to this category. Unimarc says on page 77: "This field will contain the control number of the authority record containing this heading. Initially it might be the number in the bibliographic agency's local files. Later it may be an international number." At the DUMC, after first trying to use the UDC numbers, we reached the conclusion that we would have to set up our own system. The classification of regions will be explained below, the only thing I'll say about it here is that it cost quite a lot of energy. The same applies to the classifications of names, often names of corporations that feature in vague terms on the map, requiring a lot of search work. The DUMC still uses UDC-numbers for the topical classification, but they are extended with a few provisional arrangements in the related authority file, pending a better solution.

For this purpose we have applied for subsidy to appoint a researcher, whose task it would be to prepare a Ph.D. on this subject. If there is enough interest, it would be feasible to study measures to improve the compatibility of the various subject identification systems. There has been a preliminary contact with the Federation Internationale de Documentation, the institution controlling the UDC and established in the Netherlands. I consider it possible that special classifications for cartographic materials could be set up within the UDC. Further, more formalized contacts can be organized after consultation with the G&ML Section. But, whether some international system invents international authority files for cartographic materials or not, it seems attractive to ensure that local exertions in this field are made available and useful to others in the Map Marc community. With an automated system and authority files it can not be difficult to exchange data with the help of convertive keys. The record numbers indicate a certain topic, regardless of language and the question whether it is a coded or a verbal identification. In this context I would be very interested to learn about systems being used elsewhere and the advantages and disadvantages experienced while cataloguing cartographic materials.

For those with a similar interest I will give the essential characteristics of the DUMC classification for regions below. These remarks are taken from a supplement to the DUMC Manual dated 18-6-1981, and consisting of 12 pages (in Dutch). The Manual also contains maps with a classification of oceans and seas, and lists of the most important codes. Since the date of publication the authority files for region have been extended according to need. To partners in the DUMC project they are made available in the form of microfiches in Dutch.

The classification for regions is a uniquely hierarchical systematic regional classification of the political situation in the world as per 1-1-1980; alterations are entered as soon as possible. For the notation of toponyms we preferably use the notation that is officially accepted and traditional in the country itself; exonyms refer to these notations. To overcome the difficulty that strictly hierarchical classifications tend to become artificial, we enter keywords as well. In our system the Mont Blanc is to be found under code 4 for Europe, and following keyword the Alps;

e.g. 4, Alps, Mont Blanc.

Europe, in natural language, as well as Alps and Mont Blanc occur in the alphabetically ordered registers; they have their own record number in the authority file. We code all geopolitical names on the state or country level and the level below (e.g. provinces). For the levels farther below we turn to the use of keywords.

If the institutions, taking part in the DUMC, need codes or keywords for regions that are not yet classified, they submit a proposition. The DUMC then enters the codes or keywords (adjusted, if necessary) into the authority file. In the rules all kinds of arrangements are made. There is a possibility to combine groups of countries or provinces; there are special provisions for seas and coastal areas; if one classification is valid only for a certain period in time, the dates of beginning and end of this period are added. To the codes and keywords all kinds of references can be added; more often than not they are provided with extensive annotations. The latter especially is a time consuming task and it would be economic to have much more co-operation in this field. Alterations and adjustments are no problem in the DUMC-system at large, because the bibliographic descriptions data base only contains the record codes of the authority files. Mutations therefor, occur mostly in the authority files.

Finally, I'd like to remark that part "Cartographic Materials" of the Dutch Cataloging Rules, to be published this fall, advises to use the region code (with or without keywords) as a main entry-block, instead of the alphabetic heading. Hereafter one can go on selecting by means of a code for topic, followed by selection according to scale. Especially for archives, there is a possibility to select according to date, instead of scale. If it is not advisable to have a special catalogue for cartographic materials exclusively, the general rules should be followed where the author's name is main entry.

The Geography and Map Libraries Section and the exchange of Map Marc data.

Although Unimarc provides a sound footing for the exchange of bibliographic data per magnetic tape, it seems to me that even more information could be exchanged than is possible via Unimarc. This especially applies to authority

files. Naturally, cartographic documents do not stand alone and also for the exchange of information they form a part of the more general policies in this field, but still it is worth considering to discuss this subject within the Section. With a view to the difficulties concerning the set-up of National Union Catalogues (especially organizational and copyright problems), it does not seem likely that there will be an International Union Catalogue very soon. The exchange of Map Marc tapes will therefor take place on a bilateral scale mostly. Still it would be a waste of effort not to bear an optimal international co-operation in mind, while setting up national Map Marc systems.

Of course the G&ML Section should beware of biting off more than it can chew, but with some deliberation a lot of money may be saved. The friendly relationships between the members of the Section, for instance, might make it possible to exchange probationers. The question I'd like to put to the Section is: "Now that the Section's work for ISBD(CM) and Unimarc has led to results, does the Section also wish to contribute to stimulating an efficient actual exchange?". In my opinion, it is especially the authority files that offer opportunities here, as the contents and the form of them are equally important. In this context it could be considered to establish contacts with the Working Group on Authority Systems (Section on Information and Technology and Section on Cataloging) and the International Marc Network Study Steering Commission (IMNSC).

To trigger a preliminary discussion, I wish to ask a few more questions. They do not pretend to be covering all aspects, but are merely meant to find out if my opinions are shared by others.

- To what extent will it be necessary and possible to create special provisions for Map Marc projects on a national level?
- Is it useful for the Section to pay attention to the exchange of Map Marc tapes?
- Do authority files containing access points merit special attention?
- How can national projects keep each other informed of developments and systems, so that integration opportunities can be evaluated?
- Is it advisable to establish an International Map Marc Users Group?
- Is micro fiche output desirable for non automated map catalogues?